

### ABSTRACT

A system and method is provided for decreasing the amount of data required to represent depth information for 3D images. In accordance with one embodiment, depth information is represented by a piecewise function  $Z(x,y)$ . An  $(x,y)$  space is split into areas representing a region of primitive shapes. For each of these regions,  $Z(x,y)$  is defined as a simple parametric analytical function. Subsequently, only a few parameters are required to encode this function in each region. By using these parametric analytical functions to represent depth value of the split, the present invention achieves advantages such as reductions in required storage space and required bandwidth with a concomitant increase in processing speed. It is emphasized that this abstract is provided to comply with the rules requiring an abstract. It is submitted with the understanding that it will not be used to interpret or limit the scope or meaning of the claims. [37 C.F.R. § 1.72(b)].